

Claims:

1. A flexible mold comprising a support and a shape-imparting layer supported by said support, wherein:

said support comprises a flexible film of a plastic material;

said shape-imparting layer comprises the reaction product of a polymerizable composition comprising at least one urethane acrylate oligomer and at least one (meth)acryl monomer; wherein said cured resin has a glass transition temperature of no greater than 0°C.

2. The flexible mold of claim 1 wherein each (meth)acryl monomer is selected from monofunctional (meth)acryl monomers and (meth)acryl difunctional monomers.

3. The flexible mold of claims 1 or 2 wherein each urethane acrylate oligomer has a homopolymer having a glass transition temperature ranging from -80°C to 0°C

4. The flexible mold of claims 1 or 2 wherein each (meth)acryl monomer has a homopolymer having a glass transition temperature ranging from -80°C to 0°C

5. The flexible mold of claims 1 or 2 wherein the polymerizable composition comprises 10 wt-% to 90 wt-% of the urethane acrylate oligomer.

6. The flexible mold of claims 1 or 2 wherein the support has a glass transition temperature of 60°C to 200°C.

7. The flexible mold of claims 1 or 2 wherein the polymerizable composition is cured with ultraviolet light.

8. A flexible mold of claims 1 or 2, wherein said support and said shape-imparting layer are transparent.

9. A flexible mold of claims 1 or 2, wherein a viscosity of said polymerizable

composition ranges from 10 cps to 35,000 cps at room temperature.

10. A flexible mold of claims 1 or 2, wherein said plastic material is at least one plastic material selected from the group consisting of polyethylene terephthalate, polyethylene naphthalate, stretched polypropylene, polycarbonate and triacetate.

11. A flexible mold of claims 1 or 2, wherein a thickness of said support ranges from 50 μm to 500 μm .

12. A method of producing a flexible mold comprising the steps of:
applying a polymerizable composition to a master mold wherein the composition comprises at least one urethane acrylate oligomer and at least one (meth)acryl monomer ; wherein said cured composition exhibits a glass transition temperature of no greater than 0°C;

stacking a flexible film support comprising a plastic material onto said master mold;

curing said polymerizable composition; and
removing said master mold.

13. The method of claim 12 wherein each (meth)acryl monomer is selected from monofunctional (meth)acryl monomers and (meth)acryl difunctional monomers.

14. The method of claims 11 or 12 wherein each urethane acrylate oligomer has a homopolymer having a glass transition temperature ranging from -80°C to 0°C

15. The method of claims 11 or 12 wherein each (meth)acryl monomer has a homopolymer having a glass transition temperature ranging from -80°C to 0°C

16. The method of claims 11 or 12 wherein the polymerizable composition comprises 10 wt-% to 90 wt-% of the urethane acrylate oligomer.

17. The method of claims 11 or 12 wherein the support has a glass transition temperature of 60°C to 200°C.

5 18. The method of claims 11 or 12 wherein the polymerizable composition is cured with ultraviolet light.

19. A method of producing a fine structure comprising the steps of:
providing the mold of claims 1 or 2;
providing a curable material between a substrate and said shape-imparting layer of
10 said mold ;
curing said material forming a fine structure integrally bonded with said substrate;
and
releasing said fine structure from said mold.

15 20. The method of claim 19, wherein said curing comprises photo-curing.

21. The method of claim 19, wherein said fine structure are ribs on a back plate of a plasma display panel.